MEASURE IMPEDANCES DIRECTLY (ohms) WITH THE 8753 VNA

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Set-up:

MEAS
- Select: S11 or S21. In the S21 mode the component under test is <u>connected in series</u> - between port 1 and 2, at the end of the coax cables.

CAL
- Calibrate S11 One port or S21 Response Thru

MEAS CONVERSION   Select:
  S11 : Z:Refl
  S21 : Z:Trans (Transmission).

Connect the component.

FORMAT LIN MAG (To display Z magnitude).
One can also select display of: RE(Z) or IM(Z).

SCALE REF
  Auto Scale
  REF VALUE: 0 > X1   (Sets the scale reference value to 0 ohms)

Displayed graphs have "Units" = ohms

The result file should have the following heading to be compatible with the Touchstone format: (example):
HZ Z RI R 1.0
1.000000000E+06 0.666406000000000E+01 1.670781000000000E+02
1.245000000E+06 0.903125000000000E+01 2.074922000000000E+02
etc...
The data transfer is in S11 ou S21 mode.
Fréquency (Hz)   RE(Z)   IM(Z)

Notes:
1- The factor 1.0 in the heading is a multiplication factor for impedance values.
It is possible to calibrate with a transformer giving an impedance ratio of 4:1 (for instance). In this case the calibration will be done with a short, open and a 200 ohm load. The impedance multiplication factor will be 4.0.
2- <u>In the S11 mode</u>, measurements are centered on 50 ohms. The accuracy of the impedance measurements decreases when the impedance under test is far away from 50 ohms. It is possible to measure between 5 and 1000 ohms with reasonable accuracy.
3- <u>In the S21 mode</u>, the component must be floating. Values between 10 et 100,000 ohms may be measured.